

## **Waterlevel: Tides, Mississippi River Discharge and Winds**

For the Fort Jackson area, the water level is affected by the tide, river discharge and the winds. The tidal station closest to the Fort Jackson area for predicted astronomical tides is at Head of Pass. While Fort Jackson is higher in elevation than Head of Pass, the tidal prediction range is similar but occurs one hour later. For example, a 0.2 foot low tide at Head of Pass occurring at 0600 will likely result in a 0.2 foot low tide at Fort Jackson at about 0700.

The tanker accident occurred near spring tide. The predicted tide height has been decreasing and will continue to decrease until December 7<sup>th</sup>. At this time, the tidal heights will begin to increase and the oil stranded on the shoreline could be remobilized. The tides will continue to increase with the next spring tide occurring near December 12<sup>th</sup>.

During the spill incident, the Mississippi River discharge at Carrollton, La (New Orleans) has been about 310,00 cubic feet per second (cfs). This is considered a low river flow condition and, the water level effects due to this discharge, considered negligible at Fort Jackson. The guage readings at Carrollton during the spill incident have ranged from about 4.1 to 3.6 feet with flood stage at 17 feet. This is consistent with low river discharge and has a minimal affect on waterlevel in the Fort Jackson area. High river discharge (i.e., 510,000 cfs) will result in 2 feet rise at Carrollton and, at Fort Jackson, the river could possibly rise 6 inches. On December 5<sup>th</sup> or 6<sup>th</sup>, the Army Corp of Engineers will likely release more water into the Mississippi River but this increase will be to low to change the waterlevel significantly in the Fort Jackson area.

Strong wind event can affect the water level in the Fort Jackson area. Southerly winds at 20 to 25 knots that persist for at least 2 days can increase the tidal height in the Fort Jackson area by 1 to 2 feet. Strong northerly winds will likely decrease the waterlevel only a few inches. This type of wind does increase the surface current: velocities at Carrollton will be similar to those at Fort Jackson.